

• COLORADO RIVER •
AQUEDUCT NEWS

THE METROPOLITAN WATER DISTRICT



OF SOUTHERN CALIFORNIA

Vol. 1

SEPTEMBER 5, 1934

No. 16



AN AQUEDUCT OUTPOST

Walsh Construction Company's Whipple Mountain camp, near the Colorado River.

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AQUEDUCT NEWS
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

LOS ANGELES, CALIFORNIA

Published twice monthly in the interest of Field and Office Workers on the Colorado River Aqueduct, and for the information of all other citizens of the Metropolitan Water District.

Vol 1 September 5, 1934 No. 16

A GREAT STEP FORWARD

Another great stride in Colorado River Aqueduct construction has been taken.

General Manager Weymouth has issued a call for bids on the building of 110 miles of aqueduct canal, conduit, and siphon, constituting the largest single construction program to be launched at one time in the history of the project.

The new aqueduct units will physically link together the water carrier's tunnels all the way between the Colorado River and the Little San Bernardino Mountains. In other words, the commencement of this work will cause the eastern end of the project to begin to take definite form—to become one great unit, rather than a group of seemingly disjointed workings.

All this means that the beginning of a new and highly important phase of aqueduct construction is now in view—bringing that much closer the day when Colorado River water will flow through a mighty new system into the thirteen cities of the Metropolitan Water District, climaxing Man's great battle against the Desert here in Southern California.

This means, also, that 2,000 more citizens of the Metropolitan Water District will be given constructive, gainful employment on the nation's largest public works project, in addition to the 4,500 men already employed on the job. The paychecks of these men will aid materially in the stimulation of business and industry and further employment in the Southland.

THE HONOR ROLL

The editor of the NEWS is looking into ways and means of having gold medals struck off for his correspondents at Little Morongo and Berdoo, Bill Vilander and Gordon Pickett. These two are kindly men. They read the editor's touching plea in the last issue of NEWS, and, after shedding a tear or two, sent in some items (God bless 'em!). Now, how about some other people following suit?

SIX COMPANIES PREPARING FOR LAUNCHING WORK ON PARKER DAM

Officials of Six Companies, Inc., contractors on Parker Dam of the Colorado River Aqueduct, are making preparations for the immediate launching of work on the structure, it was learned last week at Los Angeles headquarters of the Metropolitan Water District.

At Boulder City, Nevada, where the construction firm is now building Boulder Dam for the Federal Government, machinery and equipment are being assembled for shipment to Parker Dam site, 150 miles down the Colorado River from Boulder.

Contract Awarded

This activity, it was pointed out, follows close upon the award of a contract for the work to Six Companies, Inc., by Secretary of the Interior Ickes. The dam will be erected under the direction of the United States Reclamation Bureau with funds provided by the Metropolitan Water District. Six Companies, Inc., submitted a low bid of \$4,239,834 last month on construction of the dam itself and the two diversion tunnels which will be required. Total cost of the structure, including materials, rights of way, and appurtenant works, will be approximately \$13,000,000.

From behind Parker Dam will be diverted the billion gallons of water daily which will be carried by the Colorado River Aqueduct completely across the State of California to the thirteen cities which make up the Metropolitan Water District.

Officials of the Water District have drawn attention to the fact that employment on the dam will be handled by the Federal Government under its own rules. Since no instructions covering this matter have been received locally, no applications for work can be taken at this time.

Camp Building First

First work to be undertaken in connection with the new dam, it was indicated, will be the erection of camp buildings at Whipple, California, a new government town which has been established on the river bank. The next step will be the driving of two diversion tunnels, twenty-nine feet in diameter, to by-pass the water around the dam site while actual dam construction is under way.

Parker Dam will be of concrete arch design, 800 feet long across its crest and 315 feet high from bedrock. Its maximum thickness will be 100 feet.

The structure will be used primarily for diversion and regulation rather than storage. It will raise the level of the river approximately eighty feet. The reservoir to be formed will be approximately fifty miles long, extending upstream almost as far as the city of Needles. The reservoir capacity will be 717,000 acre feet.

Low Flow Is Aid

Construction of Parker Dam is being launched now, rather than at a later date, in order to take advantage of the low flow of the river during the period while Boulder Dam reservoir is being filled upstream.

Specifications reveal that there will be 260,000 cubic yards of concrete in the dam and 15,000 cubic yards in the spillway bridge piers, gate guides, and starway shaft; 1,150 cubic yards in the operating house, and 870 cubic yards in the curbs, parapets, and roadway bridges.

Excavation for the diversion dam and coffer dams will be approximately 1,508,000 cubic yards common and 83,000 cubic yards of rock. The main excavation for the dam in earth will be made with 2:1 slopes. Rock excavated for the foundation will be placed as a blanket on the slopes of the common excavation to stabilize the lower part of the slopes. Stripping of the overburden from the sand and gravel deposits to be used for concrete aggregates will require about 150,000 cubic yards of excavation.

Camp Site Selected

A tract on the California side of the river about a half-mile below the dam site has been set aside by the Government for the contractor's camp. Plans for the camp will be subject to approval by the contracting officer, specific provisions being made for water supply, sanitation and fire protection.

Construction of a permanent road on the California side of the river about 1,800 feet in length, extending from a connection with the existing aqueduct highway to the crest of the dam, and a 600-foot spur to the power house site, is included in Schedule No. 1.

CALL FOR BIDS ISSUED ON 110 MILES OF AQUEDUCT SIPHONS, CANALS, AND CONDUITS

Issuing a call for bids on the building of 110 miles of Colorado River Aqueduct siphons, canals and conduits, General Manager and Chief Engineer F. E. Weymouth last week took the greatest stride forward in aqueduct construction since the launching of the project.

Cost of this great block of construction is estimated at \$35,000,000, including cement, steel, rights of way, and engineering work. Only a part of the total cost will be covered by the contractors' bids. Added to the ninety-one miles of sixteen-foot tunnels now being built, the 110 miles covered in the call for bids will place 201 miles, or more than two-thirds, of the giant water carrier under construction.

Four-Year Job

The work contemplated will require about four years to complete, and approximately 2,000 men will be given employment on the job over the major part of the construction period, it is estimated. About 4,500 men already are employed in the aqueduct tunnels, thirty-eight miles of which thus far have been excavated.

The new construction has been divided into sixteen schedules or units upon which contractors may bid. These aqueduct units include 120 siphons, totaling fourteen miles in length; thirty-four miles of covered conduit, and sixty-two miles of lined canals, nearly all of concrete construction.

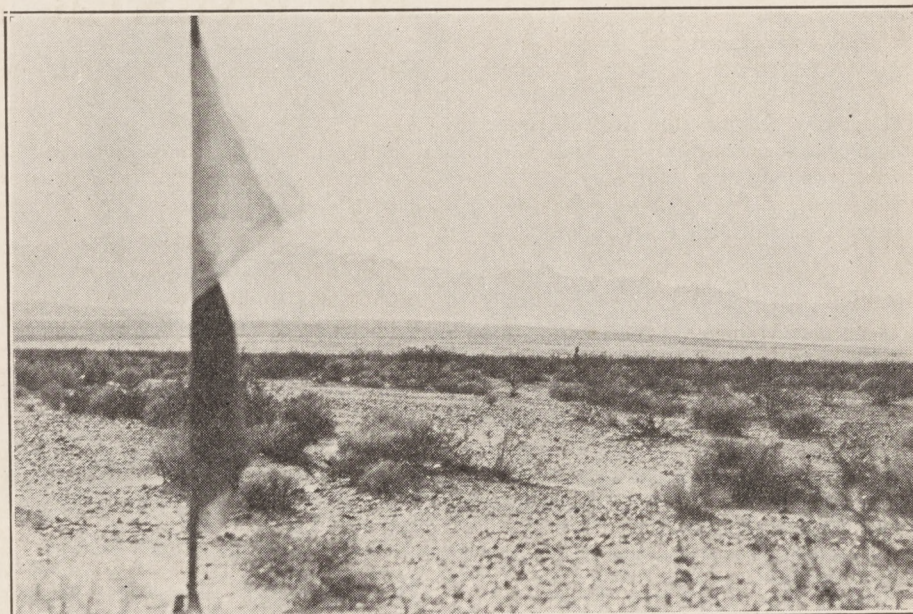
Completes East End

Construction of these aqueduct units, linking together the tunnels of the project, will complete the great water carrier all the way from the Colorado River to a point approximately twelve miles east of Indio.

Contractors' bids on this work will be received at Metropolitan Water District headquarters, 306 West Third Street, Los Angeles, until 10 o'clock on the morning of October 3, according to General Manager Weymouth's announcement.

Sealed Estimate

Mr. Weymouth will file with the District board of directors a sealed estimate of the cost of all of the work being advertised. This estimate will be filed twenty-four hours prior to the opening of contractors' bids. The District board will consider all bids received together



Where one of the new aqueduct siphons will be built—looking west across the line of Freda siphon toward the Granite Mountains. This terrain is typical of that to be crossed by the new construction.

with the General Manager's estimate, and will then decide whether to award the various construction units to the low contractors' bid or to have the work done by forces employed directly by the District.

Schedule Group Number	Conduit	Canal	Siphons	Total
1	3.85	—	0.32	4.17
2	4.66	—	1.13	5.79
3	—	5.27	2.40	7.67
4	—	9.50	0.58	10.08
5	—	9.39	0.76	10.15
6	—	—	2.94	2.94
7	2.34	2.90	—	5.24
8	—	7.88	1.52	9.40
9	0.63	7.79	0.56	8.98
10	—	7.50	0.93	8.43
11	0.60	6.45	1.38	8.43
12	6.00	—	0.33	6.33
13	0.19	5.65	0.58	6.42
14	5.72	—	0.41	6.13
15	6.43	—	0.36	6.79
16	3.23	—	0.44	3.67
Total	33.65	62.33	14.64	110.62

Except in certain rock sections where the width is twelve feet, the canal to be built will have a bottom width of approximately twenty feet and a depth of water of about ten feet. The conduit is to be of semielliptical section with a height of sixteen feet. The siphons generally will be of precast concrete pipe or of monolithic construction, alternative bids being called for these two types. For two of the siphons bids also will be received upon welded steel pipes, and monolithic concrete construction only

will be considered on certain short siphons.

241-Mile Job

The total length of the main aqueduct is 241 miles from the Colorado River to a main storage reservoir near Riverside. From this point the Water District will build 144 miles of huge distributing mains to deliver water to each city in the District.

In making ready for this step in aqueduct construction, the Metropolitan Water District already has completed two test siphons—one at Fan Hill and one at Little Morongo Canyon.

The Fan Hill structure is of monolithic design, while the Little Morongo siphon is precast. Both are approximately 700 feet long, and both are 12 feet in diameter. The Fan Hill unit was constructed by District forces and the one at Little Morongo by forces of the American Concrete and Steel Pipe Company and the United Concrete Pipe Company.

Also built at Fan Hill was 900 feet of cut and cover conduit and a transition, linking the siphon and conduit.

All of these structures have been submitted to extensive tests by District engineers, studying the comparative merits of the two types of construction.

Call For Bids On Hauling of Cement

Cement became a matter of interest last week when General Manager Weymouth issued a call for bids for transporting approximately 360,000 barrels of Portland cement and for furnishing equipment for charging, mixing, and placing concrete for lining tunnel.

The cement transportation bids will be received at District headquarters, 306 W. Third Street, Los Angeles, until 10 A. M., September 10. The equipment bids will be received at the same place until 10 A. M. on September 25.

Contract documents, together with the instructions to bidders, form of proposal with bidding sheet and bidder's plan for construction, form of agreement, specification, and drawings may be purchased at Room 1007, Metropolitan Water District Building.

Test Is Given for Master Minds On Aqueduct

Monte Hawks of the design division submits the following food for thought for the master minds of the aqueduct line:

"A tunnel drilling crew consists of three men—Wilson, Johnson and Murphy. They are the drill-runner, chucktender and nipper, but not respectively. Recently three visitors came to see the job—all business men who happened to have the same three names as the drilling crew.

"Consider the following facts about all concerned:

"(1) Visitor Murphy lives in Los Angeles.

"(2) The chucktender lives halfway between Los Angeles and Banning.

"(3) Visitor Wilson earns exactly \$200 per month.

"(4) Johnson beat the nipper at checkers.

"(5) The chucktender's nearest neighbor, one of the visitors, earns exactly three times as much as the chucktender, who earns \$1,500 a year.

"(6) The visitor whose name is the same as the chucktender's, lives at Banning.

"The Question is: Who is the drill-runner?"

There is only one correct answer. It will appear in the next issue of the NEWS.



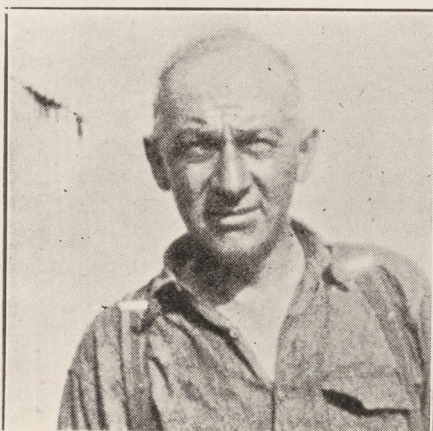
The "hard hat" of Division 3, with Miss Elizabeth Runyan, nurse at the Contractors' General Hospital, and Division Engineer John Stearns. (See next column).

Two More Service Records Are Reported

Two more notable aqueduct service records were reported to the NEWS last week—those of J. L. Buchanan of Pushawalla and Ralph Snarr of Bernasconi.

Mr. Buchanan started work on the aqueduct on February 9, 1933, and has lost only two working days since that time, both caused by illness.

According to the NEWS' informant, Ralph Snarr began work at Bernasconi tunnel in April of 1933, and has not had one hour's lost time since then. It is asserted that Mr. Snarr is a versatile fellow, being master mechanic, chief electrician, compressor operator all rolled into one.



Bernasconi's Snarr.

Hard Hat Trophy Is Established at Division 3

The mythical "hard hat" of Division 3 became reality last week when Division Engineer John Stearns formulated rules of competition and established a trophy to be awarded each month to the tunnel camp making the best record under the rules.

Division Engineer Stearns explains the history and purposes of the "hard hat" as follows:

"Several months ago a mythical hard hat was awarded to Coxcomb tunnel in recognition of a good clean job. A little later East Iron became a serious contender for this honor and the mythical hard hat moved from East Coxcomb to East Iron. During the last few weeks West Iron and West Eagle have shown an interest in securing possession of the hard hat. Both of Broderick & Gordon's jobs have also indicated a desire to meet the other contractors in this competition.

"The interest that has been aroused, suggested the necessity of securing an actual trophy to be awarded each month under a definite set of rules. A specially made hard white hat emblematic of a safe and clean job has been donated for this purpose. Each month, beginning in September, it will be awarded to the contractor having the highest percentage for the month computed under the following rules:

The lowest accident frequencies for the month.....	25%
The cleanest camp.....	10%
The cleanest storage yard and approach cut.....	15%
The best timber or steel in both lagged and unlagged sections.....	25%
The cleanest adit and tunnel.....	25%

"At the time the award is made, the contractor's name and date will be lettered in black on the hat and on the completion of the first schedule in Division No. 3, the hat will become the permanent possession of the contractor who has won it the most number of times."

Road Work Will Start Soon

Of interest to employees on the western end of the aqueduct line is news that work on the Jackrabbit trail improvement between Beaumont and Riverside is scheduled to be started at an early date, after almost a year of delay. Between \$450,000 and \$500,000 is expected to be spent on the work.

DIRECTORY

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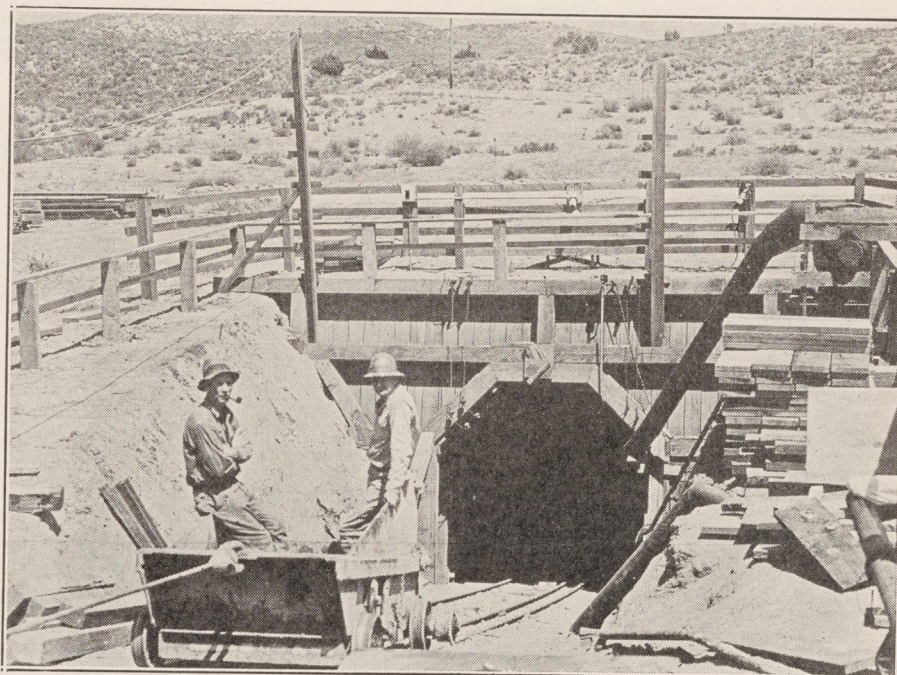
General Manager and Chief Engineer.....F. E. Weymouth
Asst. General Manager.....J. L. Burkholder
Asst. Chief Engineer.....Julian Hinds
General Counsel.....James H. Howard
Asst. Controller.....J. M. Luney
General Superintendent.....James Munn
Chief Elec. Engineer.....J. M. Gaylord
Construction Engineer.....J. B. Bond
Asst. to Gen. Mgr.....Don J. Kinsey

DIVISION ENGINEERS

Division 1.....R. C. Booth
Divisions 2 and 3.....John Stearns
Division 4.....R. B. Diemer
Divisions 5 and 6.....B. C. Leadbetter

SUPERINTENDENTS

Colorado River, Copper Basin and Whipple Mt. Tunnels, Walsh Construction Co., F. T. Huntington, Gen. Supt.; W. A. Huntington and E. A. Hatch, Tunnel Supts.
Coxcomb Tunnel and Iron Mt. shaft, Winston Bros., E. A. Bernard, Gen. Supt.; F. T. Hillman and R. B. Johnson, Tunnel Supts.
Iron Mt. Tunnel, West Portal, Utah Constr. Co., Ben Arp, Gen. Supt.
East Eagle Mt. Tunnel and West Eagle Mt. Tunnel, east portion, Broderick & Gordon, C. J. Kavanagh, Gen. Supt.
West Eagle Mt. Tunnel, west portion, L. E. Dixon and Bent Bros., P. C. Guinn, Gen. Supt.
Hayfield Tunnel No. 1, Hunkin & Conkey Constr. Co., G. B. Hoag, Gen. Supt.; F. Backlund, Tunnel Supt.
Hayfield Tunnel No. 2, Shofner & Gordon, H. E. Warden, Gen. Supt.
Cottonwood Tunnel, J. F. Shea Co., Inc. Gilbert Shea, Gen. Mgr.; Joe Bonner and Carl Nelson, Tunnel Supts.
Mecca Pass Tunnels, Morrison-Knudsen, S. A. Dahlberg, Gen. Supt.
Coachella Division, R. M. Merriman, Division Supt.
Yellow Canyon Adit, E. Coachella Tunnel—District Force Account.....W. L. Taylor
Fargo Adit, East Coachella Tunnel—District Force Account.....J. H. Manwaring
Berdoe Adit, East Coachella Tunnel—District Force Account.....F. A. Weller
Pushawalla Adit, East Coachella Tunnel—District Force Account.....Kenneth MacIsaac
Thousand Palms—District Force Account.....D. L. Reaburn
Wide Canyon—District Force Account.....John Jackman
Long Canyon—District Force Account.....E. E. McCabe
Little Morongo—District Force Account.....R. L. Bryant
Whitewater Tunnels, West Constr. Co., H. E. Carleton, Gen. Supt.; Angus MacDonnell, Tunnel Supt.
San Jacinto Tunnel, Wenzel & Heneoch, Walter Hoenecke, Gen. Supt.; W. A. Boyd, Walter Baer, and Jack May, Tunnel Supts.
Bernasconi Tunnel, Hamilton & Gleason Co., H. J. King, Gen. Supt.
Valverde Tunnel, Dravo Contr. Co., R. W. Remp, Gen. Supt.; H. C. Richardson, Asst. Gen. Supt.; Dean Luther, J. R. Glaeser, Jack Stone, and Fred Youmans, Tunnel Supts.



Here is the portal of the new inclined adit which will serve as a fourth point of access to Valverde tunnel, the other three being vertical shafts. The new adit is near the western end of the bore.

Contractors' Safety Committees to Be Formed

Aiming at improved accident prevention records, tunnel contractors on Division 3 met with Division Engineer John Stearns last week and formulated plans for the organization of safety committees on each job.

A committee will be appointed at each camp to study the causes of accidents and determine proper corrective measures which may be taken. Meetings of the committee will be open to all employees, and suggestions will be solicited.

According to plans perfected at last week's conference, the safety committee meetings will be held each month between the first and the tenth.

Power, Water Line Relocation Is Finished

Work was completed last month on the changes in location of the construction water line and power lines between Mecca Pass and Buried Mountain as necessitated by the building of the new state highway between Indio and Shaver's Summit. The work was being done in accordance with an agreement between the Metropolitan Water District and the State of California.

M. W. D. Levy for 1934-35 Is Fixed

An amount not exceeding approximately \$1,540,000 is to be levied by the Metropolitan Water District against the thirteen cities comprising the District including Los Angeles, it has been determined in a resolution adopted by the District Board of Directors.

Each city in the District has the option of paying its share of District charges either from general city revenues such as water earnings or by tax money. In the event that a city pays all of its share of District charges in taxes the levy will not exceed ten cents on each \$100 of assessed valuation, it was provided in the District Board's resolution.

Acting on the recommendation of its controller and finance committee, the District Board authorized the use of approximately \$775,000 in its reserve fund to meet bond interest and other charges during the fiscal year '34-'35, and thus was able to sharply reduce the amount of taxes to be collected this fiscal year.

In contrast with the amount of \$1,540,000, which will be collected by the District this fiscal year, either in the form of city revenues or taxes, it was pointed out, more than \$10,000,000 has thus far been distributed by the District to the persons employed on aqueduct construction work.

BEST PROGRESS**This Period**

Rock Tunnels - Seven Palms W. 902 ft.
Gravel Tunnels - Whitewater No. 2. 663 ft.

TUNNEL PROGRESS

August 1 to 31, 1934

Tunnel Excavated to Date 39.08 Miles

BEST WEEK'S PROGRESS**This Year**

Rock Tunnels - Colorado River. 265 ft.
Gravel Tunnels - Whitewater No. 2. 233 ft.

TUNNELS ON CONTRACT	Length in feet	Number of Shifts	EXCAVATION PROGRESS IN FEET			TUNNELS ON CONTRACT	Length in feet	Number of Shifts	EXCAVATION PROGRESS IN FEET			
			Average Per Shift	This Period	Total to date				Average Per Shift	This Period	Total to date	
Walsh Constr. Co. COLORADO RIVER West Portal	(5514) 5514	93	7.6	708	2137	J. F. Shea Co. COTTONWOOD East Portal West Portal	(20,105) 10,114 9991	81 81	8.6 8.7	693 705	7518 7155	
COPPER BASIN, No. 1 West Portal	(752) 752			0	752	Morrison-Knudsen MECCA PASS No. 1, West Portal No. 2, West Portal No. 3, East Portal	(5,940) 338 997 4605	33	6.0	0 198 0	338 997 4605	
COPPER BASIN, No. 2 East from adit Adit West from adit	(11,580) 1878 330 9702	93	9.0	836	5852	West Constr. Co. WHITEWATER No. 1, West Portal No. 2, East Portal	(10,206) 2060 8146	0 81	0 8.2	0 663	35 7967	
WHIPPLE MT. East from adit Adit West from adit	(32,265) 18,352 924 13,913	93 93	8.1	751 0	5497 924 4623	Wenzel & Henoch SAN JACINTO East from Cabazon Cabazon shaft Cross drift West from Cabazon	(67,415) 8553 246 935 22,839	93	2.2	207 0 0 748	899 246 935 3899	
Winston Bros. IRON MT. East from shaft Shaft West from shaft	(39,759) 9844 165 13,743	80 80	4.8	385 0	2498 165 5366	East from Potrero Potrero shaft West from Potrero West Portal	20,589 796 6712 8722	0 0 0 93	0 0 0 4.6	0 0 0 424	160 796 223 2522	
Utah Constr. Co. IRON MT. West Portal	16,172	91	6.7	612	8157	Hamilton & Gleason BERNASCONI East Portal	(6220) 6220	56	6.8	380	4526	
Winston Bros. COXCOMB East Portal West Portal	(17,795) 8765 9030	80	8.2	661 0	6583 0	Dravo Contr. Co. VALVERDE East from Shaft 1 Shaft 1 West from Shaft 1	(38,765) 2140 64 1525	41 84	6.5 3.4	268 0 284	2140 64 1594	
Broderick & Gordon EAST EAGLE MT. West Portal	(9,442) 9442	81	4.4	357	718	East from Shaft 2 Shaft 2 West from Shaft 2	5400 204 5400	87 87	1.8 5.3	155 0 463	4151 204 4486	
WEST EAGLE MT. East from adit Adit West from adit	(26,494) 7871 2008 7974	81 81	5.5 6.3	447 0 513	2597 2008 1841	East from Shaft 3 Shaft 3 West from Shaft 3	6950 192 6950	87 87	0.4 4.8	38 0 420	2488 192 4497	
Dixon & Bent WEST EAGLE MT. West Portal	10,649	81	6.7	546	6116	East from Adit Adit West from Adit	5117 406 5283	58	1.8	0 103 0	0 391 0	
Hunkin & Conkey HAYFIELD, No. 1 East from adit Adit West from adit	(9677) 5317 511 4360	86 86	5.7 4.9	491 0 425	2553 511 2175	Total Excav. Contract Tunnels exclusive of Adits and Shafts (In Miles)	307.364 58.21	2337	6.0	13,916 2.64	122,852 23.27	
Shofner & Gordon HAYFIELD, No. 2 West Portal	(5435) 5435	54	7.2	388	3309							
TUNNELS ON FORCE ACCOUNT												
EAST COACHELLA TUNNEL Yellow Canyon Adit East from adit West from adit	Sched. 1 1 1	(96,610) 686 10,204 10,076				WIDE CANYON No. 1, E. Portal No. 1, W. Portal No. 2 Tunnel	Sched. 5 6 6	5122 9183 848	81 81	7.4 8.7	596 702 0	2746 6157 848
Fargo Canyon Adit East from adit West from adit	2 2 2	891 11,850 15,200	81 81	7.4 2.4	0 598 195	SEVEN PALMS E. Portal W. Portal	6 7	(16,730) 8390 8340	9 81	5.0 11.1	45 902	4810 2596
Berdoo Canyon Adit East from adit West from adit	3 3 3	2042 15,824 12,456	81 81	6.9 8.2	0 559 664	LONG CANYON E. Portal W. Portal	7 8	(15,240) 8360 6880	81	8.9	721	2435 0
Pushawalla Canyon Adit East from adit West from adit	4 4 4	2935 10,186 10,814	81 81	7.7 8.1	0 627 659	BLIND CANYON E. Portal W. Portal	8 8 8	(6,788) 6788 —	81	8.4	681	0 2130
WEST COACHELLA TUNNELS THOUSAND PALMS No. 1, West Portal No. 2, Tunnel	5 5 5	(81,109) 16,058 3838	81	6.2	502 0	MORONGO No. 1 E. Portal W. Portal	8 8 8	(5,512) 5512 —	81	7.6	615	1751 0
						MORONGO No. 2 E. Portal W. Portal	8 8 8	(1790) 1790 —				0 0
						Total excav. Force Acct. Tunnels excl. of Adits and Shafts (In Miles)		177.719 33.66	1224	7.6	9314 1.76	83,455 15.81
						Total Tunnel Excavation (Miles)		91.87		6.5 ft.	4.40	39.08

Heading excavation is counted as two-thirds of full tunnel excavation.

NEWS FROM FIELD AND OFFICE

Computations completed recently resulted in the award of the Coachella Division progress flag for July to Berdoo Camp. This information was not available in time for the August 20 issue of the NEWS which carried notice of other flag awards.

In a pretty ceremony on September 4, in the Little Church of the Flowers, Glendale, was solemnized the marriage of C. B. (Kirby) Brothers and Miss Virginia Van Hook. Miss Van Hook is from Topeka, Kansas, and a graduate of the State College at Manhattan, Kansas. "Kirby" is the popular welder of the Little Morongo mechanical forces. The new home will be established in Banning.

* * *

With traffic greatly increased since the inception of work on the western end of the aqueduct, the Lamb canyon road between San Jacinto and Beaumont has been included in the Riverside County SERA program, it was learned last week.

* * *

On Saturday, August 25, the Little Morongo forces drove 67 feet of tunnel and placed 60 feet of shoring. The shoring used was new style steel. Morongans claim this to be some sort of a record in rock section where the supporting lagging was placed the same day.

* * *

Proving that it doesn't take size to be a miner, the smallest man at Berdoo Camp (in fact, smallest on the Aqueduct), Archie Garson, has won a promotion from cable tender to mucking machine operator. When the machine needs repairing they don't have to jack it up, he just crawls right under it.

* * *

Berdoo holed through the raise in the east heading July 28 at 11:45 A. M. The raise is a 4x7 foot shaft, 157 feet high from the bottom of the tunnel and offset 18 feet from the center line.

* * *

Approximately 250 feet of 4x5-foot test pits has been excavated to date at the Arizona gravel deposits on the Bill Williams River, near Parker Dam site, under Bureau of Reclamation specifications. The work is about 50 per cent complete.

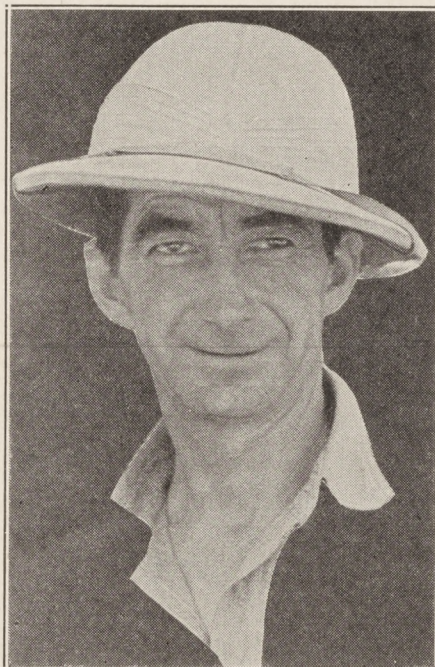
Ben Nutter of the Testing Laboratory staff (whose handsome face and figure are reproduced on Page 8) is making plans for leaving the District soon to resume his pursuit of higher knowledge at Oregon State College. At the beginning of the Autumn term, Ben will enter as a junior in civil engineering.

* * *

Residents of the Imperial Valley were breathing easier last week as the flow of the Colorado River continued to increase, apparently indicating the end of danger of a serious drought.

* * *

Division Superintendent and Mrs. Richard M. Merriman and children, who returned from a vacation trip to Vancouver last month experienced an exceedingly exciting incident on their return voyage, while aboard the S. S. Emma Alexander, which was rammed by a tramp freighter in a dense fog. The accident occurred at 1 A. M., but fortunately the ship was able to reach port under its own power, and no casualties resulted.



Guess again, folks. This is not Frank Buck or Martin Johnson, fresh from the wilds of darkest Africa. It is not even Jungle Jim from Zanzibar. Give up? All right, we'll let you in on the truth. It's none other than the original copy of the Old Man of the Mountain—San Jacinto Mountain, we mean. In short, it's Jack May, superintendent at Cabazon.

AQUEDUCT TEMPERATURES Aug. 12 to Aug. 25, inclusive

	Max.	Min.
Div. 1	112°	73°
Div. 2 & 3.....	112°	70°
Div. 4	109°	77°
Div. 5 & 6.....	105°	54°

Bernard Brennan, city attorney of Glendale, took his seat on the board of directors of the Metropolitan Water District last week, succeeding Director Frank P. Taggart, who has resigned.

* * *

As these notes are being written we receive the information that Morongo's good neighbor, W. G. "Bill" Anderson, has just arrived at the Little Morongo commissary with his auto loaded with more good reading matter. The boys are even abandoning their favorite indoor sports of pinochle and poker as they grab for National Geographics, the Golden Book, Reader Digests, and Westerns.

* * *

Road maintenance crews on Divisions 1, 2 and 3, have been occupied in repairing shoulders and other damage done to District highways during the storm of August 23. Many dips were filled with silt, gravel, and debris as a result of the heavy rainfall. Division Engineer Booth reports that Division No. 1 headquarters has had more rain (one and one-half inches) during the past month than fell during the twelve months of last year.

* * *

A portable chlorinator is being installed at the booster pump at Division 3 Headquarters to assist in more rapid clearing of the water from Pinto well West.

* * *

The field crew of the Bureau of Reclamation has been occupied during the past week taking 50 foot scale topography on the Arizona side of the river, from the Bill Williams River to a point below the downstream portals of the diversion tunnels.

* * *

A baby daughter, Clara Arlene, was born to Mr. and Mrs. H. B. Webster, on August 15, at Contractors' General Hospital, Division 3, it was learned last week. Mr. Webster is employed by Dixon & Bent, at West Eagle Mountain.

New World's Records Established By M. W. D. Crews

A new Colorado River Aqueduct tunnel driving record, and what is believed to be an all-time record for speed in hard rock tunnel excavation, was established during the month of August by workmen employed directly by the Metropolitan Water District on the Coachella Division of the aqueduct.

Despite desert heat conditions the Coachella Division tunnel crews, working on fifteen tunnel headings out of eight camps, drilled and blasted their way through 9,314 feet, or almost two miles, of hard rock during the one month's period ending August 31.

All tunnel records heretofore established on the 241 mile aqueduct line were smashed on the last day of August, when tunnel crews working on two headings out of Long Canyon camp on the Coachella Division excavated ninety-three feet of hard rock tunnel during the twenty-four hour period ending midnight August 31. This same tunnel camp established other new records by excavating 241 feet of tunnel during the week ending August 31, and 1,623 feet for the month of August. E. E. McCabe is superintendent and Tim Sides is general foreman of this champion aqueduct tunnel camp.

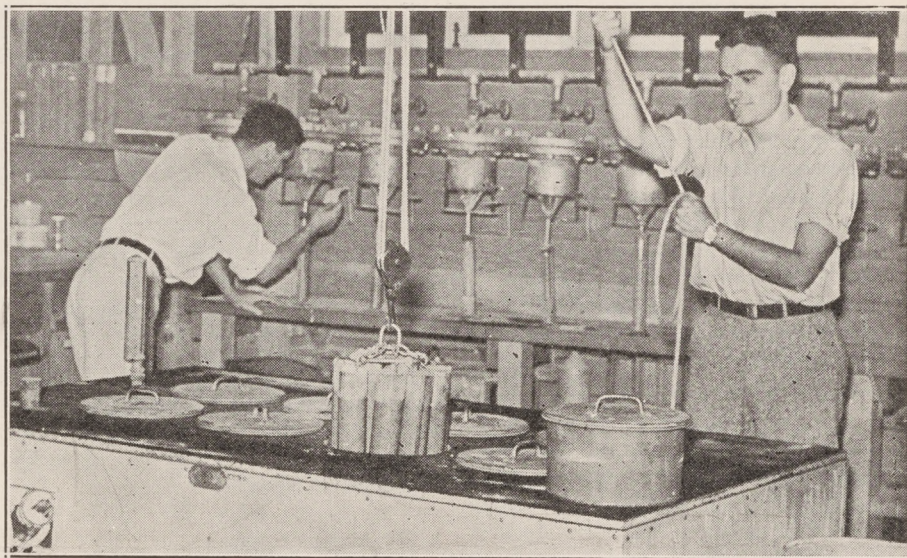
The laurels for the crews making the best daily record on one heading went to the three eight-hour crews working on the west heading of the Seven Palms tunnel on the Coachella Division. These crews advanced fifty-four feet in one heading during the twenty-four hours ending midnight August 31.

Berdoo Camp came in for its share of distinction by completing what is declared to be a world's record for the year ending August 15. Working from two headings, Berdoo crews drove 14,078 feet during the past 12 months—7,180 feet east and 6,898 feet west.

Employees' Bridge Tournament Started

All contract bridge players of the Los Angeles office are urged by the Employees Association to be present to start the Bridge Tournament on Friday evening, September 7, at 7:45 P. M.

The tournament will continue to be played on Friday evenings of each week thereafter, it is announced.



Part of the District Testing Laboratory's equipment: In the foreground is the equipment for freezing and thawing used to determine comparative durability, and in the background is equipment used for measuring relative impermeability. The picture shows Don Woodin (left) and Ben Nutter of the laboratory staff.

CEMENT, CONCRETE TESTS IN BANNING LAB. ARE DESCRIBED

(EDITOR'S NOTE: The following is the second of two articles dealing with the functions of the Metropolitan Water District Testing Laboratory at Banning, operated under the direction of Testing Engineer Lewis H. Tuthill.)

Acceptance tests of cement form a large part of this function of the laboratory. Large bins are filled at the cement mills for test and later shipment to Aqueduct points. These bins are sampled by a representative of the District, the samples shipped to the laboratory at Banning, where they are tested physically and chemically according to approved standards and methods. When the tests are completed and found to be satisfactory, the bin is released for shipment. The representative of the District is continually present at the mills and makes certain that shipments to the Aqueduct are taken only from bins tested and released by the District. All cement tests will be tied in with the ultimate destination and use of the cement in the records and part of each sample will be sealed and stored as a permanent reference sample in case of later question.

After many preliminary tests it is quite certain that similar combinations of similar materials under proper conditions specified will produce concretes having strength and other properties within the range of values expected and required. Nevertheless it is general practice to make one or more concrete specimens from each 100 cubic yards of concrete going into the work as a check on the quality obtained and for a test of

record. Such specimens, 6" x 12" cylinders, will be capped, cured moist at 70° F. for 28 days and tested in compression in the laboratory. At the above rate over 40,000 such specimens will be prepared and tested during the construction period. In close connection with the above concrete testing there will be many tests made of aggregates as prepared for batching and studies and recommendations made of the best proportions for using them on the work.

For two years prior to May, 1933, the preliminary testing work was done in temporary quarters in the basement of the building housing the District's Los Angeles office. The laboratory was then moved to the field headquarters at Banning into a new one-story frame building with a concrete floor, approximately 52' x 70'. Principal equipment in this building is the chemical and physical test laboratory for cements, a 16' x 30' constant temperature moist curing room, a 300,000 pound Universal automatic hydraulic testing machine, freezing and thawing equipment for 500 pounds of mortar, concrete or aggregate specimens, impermeability test equipment, and optical comparator for observation of volume change, and sand and gravel screens and shakers.